Jeff Terry

MR-CAT
Building 433B Sector 10
Advanced Photon Source / Argonne National Laboratory
Argonne, IL 60439
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Education

Ph.D.
Chemical Physics
1997

Stanford University
Department of Chemistry
Stanford CA 94305

B.S.
Chemistry
1990

University of Chicago
Department of Chemistry
Chicago IL 60637

Work Experience

Research Assistant Professor
01/03 to present

Illinois Institute of Technology
MR-CAT / Department of Biological, Chemical, and Physical Sciences
Argonne IL 60439

Adjunct Assistant Professor
10/01 to present

University of Notre Dame
Department of Physics
Notre Dame IN 46556

Senior Research Associate
Adjunct Assistant Professor
8/00 to 12/02

Illinois Institute of Technology
MR-CAT / Department of Biological, Chemical, and Physical Sciences
Argonne IL 60439

Joint Staff Appointment
08/01 to present

Argonne National Laboratory
Chemical Technologies Division
Argonne IL 60439

Staff Scientist
11/98 to 7/00

Los Alamos National Laboratory
Materials Characterization Team
Nuclear Materials and Technology Division
Los Alamos NM 87545

Research Associate
9/97 to 11/98

Los Alamos National Laboratory
Materials Characterization Team
Nuclear Materials and Technology Division
Los Alamos NM 87545

Research Associate
12/96 to 9/97

Northwestern University
Department of Materials Science and Engineering
Evanston IL 60208

Jeff Terry

Co-term Research Associate
06/97 to 9/97

Argonne National Laboratory
Materials Science Division
Argonne IL 60439

Research Experience

MR-CAT
8/00 to present

X-Ray Absorption Spectroscopy, X-ray Scattering, X-ray Diffraction

A.)Applied the above techniques to investigate the electronic and geometric structure of molecular magnets: Determining the electronic and geometric structure of manganese ions in Mn_{12} Acetate.

B.)Applied the above techniques to determine the electronic and geometric structure of nanoalloys. Radiolysis has been used to synthesize alloys on a scale of approximately 10 nm.

C.)Applied the above techniques to determine the role of Cu impurities in the function of CdTe photovoltaic cells.

D.)Applied the above techniques to determine the local structure of tracer quantities of radiopharmaceuticals.

Los Alamos National Laboratory
Staff Scientist
11/98 to 7/00

Photoelectron Spectroscopy, Photoelectron Diffraction, X-Ray Absorption Spectroscopy, Low Energy Electron Diffraction, 115 KeV X-Ray Pair Distribution Function Spectroscopy

A.)Applied the above techniques to investigate the electronic and geometric structure of plutonium allotropes and alloys with the goals of: I)Determining the electronic (and geometric) structure of plutonium metal (α, δ, and other allotropes); II) Determining the electronic (and geometric) structure of Pu oxide; III) Determining the surface chemistry of plutonium; IV) Integrating of theory with the experimental results.
B.)Applied the above techniques to study radiation damage in $MgAl_2O_4$ spinels.
C.)Determination of the soft x-ray transitions in silicon based insulators.
D.)Determination of the band structure of a family of planar compounds including MoS_2.
E.)Investigation of the interactions of Pu solutions with proposed backfill materials for long term storage of nuclear waste and bacteria that are present at proposed sites.

Los Alamos National Laboratory
Post–Doctoral Advisor:
Dr. Roland Schulze
9/97 to 11/98

Photoelectron Spectroscopy, Photoelectron Diffraction, X-Ray Absorption Spectroscopy, Low Energy Electron Diffraction

Applied the above techniques to investigate the oxidation states, bonding, and conformation chemistry of plutonium, in molecular, surface sorbed, and solid forms with the goals of: I) Determining the oxidation states of plutonium in molecular solids using photoelectron spectroscopy; II) Studying the interactions of these molecular compounds with well characterized model environmental surfaces by performing sorption reactions under controlled conditions from solution or gas phase; III) Examining samples from the Source Term Test Program (STTP), the large scale experiment in which Pu-bearing actinide waste has been added to liter and 55-gallon drum vessels containing brines and waste matrix materials.

Northwestern University
Post–Doctoral Advisor:
Prof. Michael J. Bedzyk
12/96 to 9/97

X-Ray Standing Waves Spectroscopy

Applied the above technique to the study of semiconductor surfaces and single–crystal oxide surfaces.

Stanford University
Doctoral Advisor:
Prof. Piero Pianetta
Co–advisor:
Prof. Edward I. Solomon
06/91 to 11/96

Photoelectron Spectroscopy, Photoelectron Diffraction, X-Ray Absorption Spectroscopy, Low Energy Electron Diffraction

Applied the above techniques to the study of Hydrogen–, Halogen–, and Alkyl–terminated silicon surfaces and single–crystal metal oxides. Designed and built an electron energy analyzer control unit out of individual power supplies to replace a HAC 5000 control unit for a VSW 100 mm hemispherical analyzer. Designed and wrote control software for the control unit using Labview.

Stanford University
Doctoral Advisor:
Prof. Steven M.George
09/90 to 06/91

Laser Induced Thermal Desorption, Temperature Programmed Desorption, Auger Electron Spectroscopy, Low Energy Electron Diffraction

Applied the above techniques to the study of adsorbates on single–crystal metal oxides.

University of Chicago
Undergraduate Advisor:
Prof. Laurie J. Butler
10/88 to 06/90

Crossed Laser–Molecular Beam Photodissociation

Assembled rotatable source, crossed laser–molecular beam apparatus. Simulated ion beam optics to focus ionized molecular fragments into a mass spectrometer using the program SimIon. Designed vacuum compatible electronics to trigger the data acquisition system to acquire data when activated by a light pulse through a chopper wheel.

Honors and Awards

2003 Illinois Institute of Technolgy
Chicago, Illinois, May, 2003

Best University Interprofessional Project

Presentation Title: IPRO 317: Design and Construction of an 0.6 m Newtonian Telescope.

1999 Los Alamos National Laboratory
Los Alamos, New Mexico, September, 1999

Science and Technology Award Recipient

Presentation Title: The Electronic Structure of Plutonium.

1995 International Chemical Congress of Pacific Basin Societies
Honolulu, Hawaii, December, 1995

Awarded Student Prize in Physical Chemistry

Presentation Title: Characterization of Alkyl–Terminated Silicon(111) Surfaces.

Appointed to the Education Committee of the Northern California Chapter of the American Vacuum Society
August, 1994 to May, 1996

Educating Educators Subcommittee Chairperson

Set up a subcommittee to distribute vacuum technology into local school systems. Designed and implemented a program in which elementary school scientists perform vacuum experiments. Performed demonstrations at Science Nights in local schools.

NSF Graduate Fellowship
1990

Honorable Mention

Professional Duties

Scientific Directions at the Advanced Light Source Workshop Attendee
Berkeley, California, March 1998

Molecular Environmental Science Working Group

Actinide Environmental Science Subgroup

Actinide Safety Review Committee at the Advanced Light Source
Berkeley, California
January 1999 - present

Reviews All Actinide Proposals

This group sets safety requirements for all experiments involving radioactive materials at the Advanced Light Source.

Teaching Experience

Instructor
Illinois Institute of Technology, January-May, 2003

CHEM 509: Physical Methods of Characterization

Taught Graduate Analytical Chemists Physical Methods such as photoelectron spectroscopy, x-ray absorption, x-ray diffraction, etc.

Instructor
Illinois Institute of Technology, January-May, 2003

IPRO 317: Design and Construction of an 0.6 m Newtonian Telescope

Taught the Interprofessional Projects course on large-scale scientific projects.
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Instructor
Illinois Institute of Technology, January-May, 2003

CHEM 344: Physical Chemsitry II

Taught Undergraduate Quantum Chemistry.

Instructor
Illinois Institute of Technology, January-May, 2003

CHEM 510: Electronics and Instrumentation

Taught Graduate Analytical Chemists Electronics.

Instructor
Illinois Institute of Technology, August-December, 2001

CHEM 321: Instrumental Methods of Analysis

Taught Instrumental Methods Lecture and Laboratory Course.

Instructor
University of Missouri, Columbia, 2001,2002

Nuclear Engineering 310: X-ray Absorption Applications to Engineering

Summer Course: Taught course on Extended X–ray Absorption Spectroscopy and its application to engineering problems.

Guest Lecturer

Diffraction Studies in Materials Science

Taught the technique of Extended X–ray Absorption Spectroscopy.

Teaching Assistant

Undergraduate Quantum Chemistry
Undergraduate Physical Chemistry Laboratory I
Undergraduate Physical Chemistry Laboratory II
Undergraduate General Chemistry
Electronic Structure of Solids
Solid State Physics

Graded homework and exams. Conducted review sessions. Rewrote electronics laboratory handbook.

Presentations

Chemistry Department Seminar
University of Missouri, Columbia
Columbia, Missouri,
October 7, 2003
(invited)

Structure of Nanosystems

Presented applications of X-ray absorbtion spectroscopy to current problems involving including medical isotopes and nanowires.

2003 Marc VI Confernce on Radioanalytical Chemistry
Kona, Hawaii,
April 11, 2003

Determination of Local Atomic Structure in Tc Compounds and Radiopharmaceuticals

Presented structural data from tracer quantities of Tc radiopharmaceuticals and comparisons to Tc standards.

SSRL Colloquium
Stanford University
Stanford, California,
April 4, 2003
(invited)

Energy and XAFS

Presented applications of X-ray absorbtion spectroscopy to current energy problems, including research on photovoltaic devices, nuclear power, medical isotopes, and novel energy storage mechanisms.

Physics Department Colloquium
University of Missouri, Rolla
Rolla, Missouri,
February 13, 2003
(invited)

Local Structure of Radiolytically-Synthesized Nanoclusters

Presented the structural data from nanowires and nanospheres alloys synthesized using radiolysis.

2000 International Chemical Congress of Pacific Basin Societies
Honolulu, Hawaii,
December 15, 2000

Recent Advances in Actinide EXAFS

Presented structural data from plutonium alloys with varying Ga concentrations was also shown. Principal component analysis of EXAFS data was highlighted. The use of a bent Laue detector to separate actinide x-ray spectra from multicomponent samples was described.

Physics Department Colloquium
University of Toledo
Toledo, Ohio,
October 24-25, 2000
(invited)

Spin and Orbital Magnetism in 5f Materials

Presented the 5d-5f resonant photoemission of metallic plutonium. A band-like behavior with remnant multiplet structure was observed.

Biological Chemical and Physical Sciences Seminar
Illinois Institute of Technology
Chicago, Illinois,
September 24, 2000
(invited)

Synchrotron Radiation Investigations of Actinides and Radiation Damage

Presented 5d-5f resonant photoemission data suggesting the partial localization of 5f valence electrons in δ-plutonium. Structural data from alloys with varying Ga concentrations was also shown. Principal component analysis of EXAFS data was highlighted. EXAFS data on ion-irradiated Spinels was shown to illustrate the short range effects of damage.

Radiochemistry/Nuclear Engineering Seminar
University of Missouri
Columbia, Missouri,
April 24-25, 2000
(invited)

Synchrotron Radiation Investigations of Actinides and Radiation Damage

Presented 5d-5f resonant photoemission data suggesting the partial localization of 5f valence electrons in δ-plutonium. Structural data from alloys with varying Ga concentrations was also shown. Principal component analysis of EXAFS data was highlighted. EXAFS data on ion-irradiated Spinels was shown to illustrate the short range effects of damage.

Jeff Terry

BESSRC CAT 2000 Workshop
Argonne, Illinois,
April 7, 2000
(invited)

Principal Component Analyis of X-ray Absorption Spectra from Pu Alloys

Presented structural data from plutonium alloys with varying Ga concentrations was also shown. Principal component analysis of EXAFS data was highlighted.

American Physical Society
March Meeting 2000
Minneapolis, Illinois,
March, 2000
(invited replacement
for G. van der Laan)

Spin and Orbital Magnetism in 5f Materials

Presented the 5d-5f resonant photoemission of metallic plutonium. A band-like behavior with remnant multiplet structure was observed.

Materials Engineering Seminar
Colorado School of Mines
Golden, Colorado,
March 2, 2000
(invited)

Electronic and Geometric Structure of Pu Alloys

Presented numerous examples of the types of work done on actinides at a synchrotron radiation facility. Including highlights of the "hot" facilities now available at the Advanced Light Source (Berkeley, CA) and at the Advanced Photon Source (Argonne, IL).

Inorganic Chemistry Seminar
Florida State University
Tallahassee, Florida,
February 10-11, 2000
(invited)

Synchrotron Radiation Investigations of Plutonium Alloys and Compounds

Presented 5d-5f resonant photoemission data suggesting the partial localization of 5f valence electrons in δ-plutonium. Structural data from alloys with varying Ga concentrations was also shown. Principal component analysis of EXAFS data was highlighted.

Rare Earth Research Conference
Chicago, Illinois,
July, 1999

Electronic and Geometric Structure of Pu Alloys

Presented numerous examples of the types of work done on actinides at a synchrotron radiation facility. Including highlights of the "hot" facilities now available at the Advanced Light Source (Berkeley, CA) and at the Advanced Photon Source (Argonne, IL).

Nuclear Materials and
Technology Division Review
Los Alamos, New Mexico,
May, 1999
(invited)

Electronic Structure of Pu Metal Allotropes

Presented core level photoemission, 5d-5f resonant photoemission, and $O_{4,5}$ X-ray absorption data from Pu allotropes.

American Vacuum Society (NM)
35th Annual Symposium
Albuquerque, New Mexico,
April, 1999
(invited)

Introduction to Synchrotron Radiation

Presented numerous examples of the types of work done at a synchrotron radiation facility. Examples highlighted real world applications of synchrotron based techniques.

International Conference
on Spectromicroscopy
Stoughton, Wisconsin,
October, 1998

Synchrotron Radiation Studies of Plutonium Compounds

Presented core level photoemission, 5d-5f resonant photoemission, and $O_{4,5}$ X-ray absorption data from Pu oxides and Pu adsorbed on MgO.

Doctoral Dissertation Defense
Stanford University
Stanford, California,
November 21, 1996

Atomic and Electronic Structures of Novel Silicon Surface Structures

Presented synchrotron radiation studies of novel silicon surfaces.

Jeff Terry

SIRM Meeting Northern California Chapter of the American Vacuum Society
Stanford, California, September, 1996

Application of X–ray Photoelectron Diffraction to Chemically Modified Silicon(111) Surfaces

Presented scanned–energy photoelectron diffraction data from Methyl– and Pentyl–terminated silicon(111) surfaces.

First International Conference on Synchrotron Radiation in Materials Science
Chicago, Illinois, July–August, 1996

Measurement of the Electronic Structure of Solids with a Display Spectrometer

Presented results from valence band mapping studies of C(111) and H–Si(111), highlighting the agreement of the experimental band structures with calculated band dispersion.

First International Conference on Synchrotron Radiation in Materials Science
Chicago, Illinois, July–August,1996

Synchrotron Radiation Studies of Chemically Modified Si(111) Surfaces

Presented scanned-energy photoelectron diffraction, NEXAFS, EXAFS, LEED, and photoemission data from Alkyl–terminated Si(111) and Cl–Si(111).

Nuclear Materials and Technology Division Seminar Los Alamos National Laboratory
Los Alamos, New Mexico, June 28, 1996 (invited)

Application of X–ray Photoelectron Diffraction and Extended X–ray Absorption Fine Structure Spectroscopy to Chemically Modified Silicon(111) Surfaces

Presented characterization data of the intermediate stages, H–Si(111), Cl–Si(111), and H_3C–Si(111), in the preparation of Methyl–terminated Si(111).

Solid State Physics Seminar University of Wisconsin, Madison
Madison, Wisconsin, April 11,1996 (invited)

Characterization of Pentyl–Terminated Si(111) Using Synchrotron Radiation

Presented scanned-energy photoelectron diffraction, NEXAFS, and photoemission data from Pentyl–terminated Si(111).

1995 International Chemical Congress of Pacific Basin Societies
Honolulu, Hawaii, December, 1995

Characterization of Alkyl–Terminated Silicon(111) Surfaces

Presented scanned–energy photoelectron diffraction data from Methyl– and Pentyl–terminated silicon(111) surfaces.

40th National Symposium of the American Vacuum Society
Orlando, Florida, November, 1993

Photoemission study of Au, Ge, and O_2 deposition on NH_4F etched Si(111)

Presented photoemission data from surface overlayers deposited on Hydrogen–terminated silicon(111) surfaces.

39th National Symposium of the American Vacuum Society
Chicago, Illinois, November, 1992

Near Edge X–Ray Absorption of Light Emitting Porous Silicon

Presented NEXAFS data from anodically etched porous silicon.

Chemical Surface Preparation, Passivation and Cleaning for Semiconductor Growth and Processing Symposium Materials Research Society
San Francisco, California, April, 1992

A Photoemission Study of Electrochemically Etched Light Emitting Silicon.

Presented photoemission data from anodically etched porous silicon.

Publications

Lahiri, D., S. Chattopahyay, M. Bertino, A. Tokuhiro, and J. Terry — *The local structure of AgPt and AgPd nanoparticles.* (In preparation).

Leyarovska, N., M. Soler, G. Christou, and J. Terry — *The Effect of Ligands on the Unoccupied Density of States in Mn_{12} Acetate Molecular Magnets: An X-Ray Absorption Near-Edge Structure Study.* (In preparation).

Leyarovska, N., M. Soler, G. Christou, and J. Terry — *An X-ray Absorption Study of Mn_{12} Acetate.* (In preparation).

Bertino, M. F., J. F. Hund, J. Sosa, G. Zhang, C. Sotiriou-Leventis, N. Leventis, A. T. Tokuhiro, and J. Terry — *High Resolution, Single-Step Patterning of Silica Aerogels.* (Submitted Langmuir).

Doudna, C. M., M. F. Bertino, F. D. Blum,A. T. Tokuhiro, D. Lahiri, S. Chattopahyay, J. Terry and J. Farmer — *Radiolytic Synthesis of Ag-Pd Homogeneous Alloy Nanowires.* (in press Journal of Non-Crystalline Solids).

Terry, J., B. Grzenia, D. Papagiannopoulouo, J. Kyger, S. S. Jurisson, and J. D. Robertson — *Structural Determination of ^{99}Tc Radiopharmaceuticals and Compounds Using X-ray Absorption Spectroscopy.* (submitted Journal of Radioanalytical and Nuclear Chemistry).

Kropf, A. J. , R. J. Finch, J. A. Fortner, S. Aase, C. Karanfil, C. U. Segre, J. Terry, G. Bunker, and L. D. Chapman — *On a Bent Silicon Crystal in the Laue Geometry to Resolve X-ray Fluorescence for X-ray Absorption Spectroscopy.* (in press Review of Scientific Instruments).

Tobin, J. G., B. W. Chung, G. D. Waddill, R. K. Schulze, J. Terry, J. D. Farr, T. Zocco, D. K. Shuh, E. Rotenberg, K. Heinzelman, G. Van der Laan, — *Resonant photoemission in f-electron systems: Pu and Gd.* (Submitted Physical Review B).

Liu, X., A. D. Compaan, N. Leyarovska, and J. Terry — *Cu K-edge EXAFS in CdTe before and after treatment with $CdCl_2$.* (Submitted to MRS Proceedings).

Doudna, C. M., M. F. Bertino, S. Pillalamarri, F. D. Blum, A. T. Tokuhiro, S. Chattopahyay, and J. Terry — *Radiolytic Synthesis of Bimetallic Nanoparticles With a High Aspect Ratio.* Nanomaterials for Structural Applications, C. C. Berndt, editor, *et al.*, 2003, Warrendale, PA, USA: Mater. Res. Soc. Symp. Proc. vol. 740, p. 359.

Doudna, C. M., M. F. Bertino, F. D. Blum, A. T. Tokuhiro, D. Lahiri, S. Chattopahyay, and J. Terry — *Radiolytic Synthesis of Bimetallic Ag–Pt Nanoparticles With a High Aspect Ratio.* Journal of Physical Chemistry B, 2003, vol. 107, p. 2966.

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Tobin, J. G., R. K. Schulze, J. D. Farr, T. Zocco, J. Terry, K. Heinzelman, E. Rotenberg, D. K. Shuh, G. Van der Laan, and D. A. Arena

Photoelectron Spectroscopy of Plutonium at the Advanced Light Source. Journal of Nuclear Science and Technology, 2002, vol. S3, p. 98.

Terry, J., R. K. Schulze, J. D. Farr, T. Zocco, K. Heinzelman, E. Rotenberg, D. K. Shuh, G. Van der Laan, D. A. Arena and J. G. Tobin

5f Resonant photoemission from plutonium . Surface Science, 2002, vol. 499, p. L141.

Espinosa, F. J., P. Villella, J. C. Lashley, S. D. Conradson, L. E. Cox, R. Martinez, B. Martinez, L. Morales, J. Terry, and R. A. Pereyra

Local Atomic Structure in α-Plutonium Alloys. Physical Review B, 2001, vol 63. p. 17411.

Terry, J., R. K. Schulze, J. Lashley, T. Zocco, J. D. Farr, E. Rotenberg, K. Heinzelman, D. K. Shuh, M. Blau and J. Tobin

Photoemission Studies at the Advanced Light Source Shed Light on Plutonium Phase Characteristics. Actinide Research Quarterly, 1999, p. 1.

Terry, J., C. Wigren, M. R. Linford, R. Cao, C. E. D. Chidsey, and P. Pianetta

Electronic structure of alkyl monolayers on Si(111). Journal of Applied Physics, 1999, vol. 85, no. 1, p. 213.

Terry, J., R. Mo, C. Wigren, R. Cao, G. Mount, P. Pianetta, M. R. Linford, and C. E. D. Chidsey

Reactivity of the H–Si(111) Surface. Nuclear Instruments & Methods in Physics Research, Section B (Beam Interactions with Materials and Atoms), 1997, vol.133, no.1-4, p.94.

Terry, J., M. R. Linford, C. Wigren, R. Cao, P. Pianetta, and C. E. D. Chidsey

Determination of the bonding of alkyl monolayers to the Si(111) surface using chemical-shift, scanned-energy photoelectron diffraction. Applied Physics Letters, 1997,vol.71, no.8, p.1056.

Terry, J.

Atomic and Electronic Structures of Novel Silicon Surface Structures., Ph.D. Thesis, SLAC Report # 514, Department of Chemistry, Stanford University, March, 1997.

Terry, J., R. Cao, C. Wigren, and P. Pianetta

Photoemission study of Au, Ge, and O_2 deposition on NH_4F etched Si(111). Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), 1994, vol.12, no.4, pt.2: p. 1869.

Yang, X., R. Cao, J. Li, J. Terry, J. Wu, and P. Pianetta

The epitaxial growth of Ge on Si(100) using Te as a surfactant. Common Themes and Mechanisms of Epitaxial Growth Symposium, P. Fuoss, editor, *et al.*, 1993, Pittsburgh, PA, USA: Mater. Res. Soc. p. 243.

Terry, J., H. Liu, R. Cao, J.C. Woicik, P. Pianetta, X. Yang, J. Wu, M. Richter, N. Maluf, F. Pease, A. Dillon, M. Robinson, and S. George

A photoemission study of electrochemically etched light emitting silicon. Chemical Surface Preparation, Passivation and Cleaning for Semiconductor Growth and Processing Symposium, R.J. Nemanich, editor, *et al.*, 1992, Pittsburgh, PA, USA: Mater. Res. Soc. p. 421.

Cao, R., X. Yang, J. Terry, and P. Pianetta

*Core-level shifts of the Ge(100)-(2*1) surface and their origins.* Physical Review B (Condensed Matter), 1992, vol.45, no.23: p. 13749.

Wu, J., M. Richter, R. Cao, J. Terry, P. Pianetta, and I. Lindau

Antimony on diamond: a comparison to Sb/Si and Sb/Ge. Novel Forms of Carbon Symposium, C.L. Renschler, editor, J.J. Pouch, editor, and D.M. Cox, editor., 1992, Pittsburgh, PA, USA: Mater. Res. Soc. p. 407.

Wu, J., Z.-X. Shen, D.S. Dessau, R. Cao, D.S. Marshall, P. Pianetta, I. Lindau, X. Yang, J. Terry, D.M. King, B.O. Wells, D. Elloway, H.R. Wendt, C.A. Brown, H. Hunziker, and M.S. de Vries

Electronic structure of single crystal C_{60}. Physica C, 1992, vol.197, no.3-4: p. 251.

Yang, X., R. Cao, J. Terry, and P. Pianetta

Photoemission study of the Si, Ge epitaxial growth process using surfactants. Chemical Surface Preparation, Passivation and Cleaning for Semiconductor Growth and Processing Symposium, R.J. Nemanich, editor, *et al.*, 1992, Pittsburgh, PA, USA: Mater. Res. Soc. p. 455.

Wu, J., Z.-X. Shen, D.S. Dessau, R. Cao, D.S. Marshall, P. Pianetta, I. Lindau, X. Yang, J. Terry, D.M. King, and B.O. Wells

Photoemission study of single crystal C_{60}. Novel Forms of Carbon Symposium, C.L. Renschler, editor, J.J. Pouch, editor, and D.M. Cox, editor, 1992, Pittsburgh, PA, USA: Mater. Res. Soc. p. 235.

Cao, R., X. Yang, J. Terry, and P. Pianetta

Microscopic study of the surfactant-assisted Si, Ge epitaxial growth. Applied Physics Letters, 1992. vol.61, no.19: p. 2347.

Yang, X., R. Cao, J. Terry, and P. Pianetta

Si(100) and Ge(100) core-level shifts: a reevaluation. Journal of Vacuum Science & Technology B (Microelectronics Processing and Phenomena), 1992, vol.10, no.4: p. 2013.

Participating Research Teams (PRT)

Molecular Environmental Science PRT at the Advanced Light Source
Berkeley, California, Funded April, 1999

Associate Core Member

This PRT was funded to build a 50-1500 eV Beam line at the Advanced Light Source by FY 2003. It was funded with a Basic Energy Sciences Grant for $6M. As a member of the PRT, I will receive dedicated experimental time for the first 3 years of commissioning and the first 3 years of operation.

Memberships

American Vacuum Society

American Chemical Society

American Physical Society

Funding

DOE *Current,* *Savannah River Subcontract* *June 2003-December 2003*	*Speciation of Uranium in Spent Fuel Waste, Co-PI* $30,200
DOE *Current,* *EMSP* *September 2003-August 2006*	*Interfacial Reduction-Oxidation Mechanisms Governing Fate and Transport of Contaminants in the Vadose Zone, Co-PI* $600,000 (total) $75,000 (portion)
DOE *Current,* *Basic Energy Sciences* *September 2003-October 2004*	*Scientific Support of the MR-CAT Beamline, Co-PI* $400,000

References

Prof. Piero Pianetta
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Prof. Bruce Bunker
Department of Physics
University of Notre Dame
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Others Available on Request